

<u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Richland 2800 George Washington Way Richland, WA 99352 Tel: (509)375-3131

TestAmerica Job ID: 300-1399-1

TestAmerica Sample Delivery Group: WC0545

Client Project/Site: CH2M Hill Chemical

For:

CH2M Hill Plateau Remediation Company PO BOX 1600 Mail Stop R3-50 Richland, Washington 99352

Attn: CPP Sample Management

Stre appr

Authorized for release by: 11/17/2015 2:00:52 PM Steven Campbell, Quality Assurance Assistant steven.campbell@testamericainc.com

Designee for

Whitney Ritari, Project Manager I (509)375-3131 ext164 whitney.ritari@testamericainc.com

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this package. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a desingee as verified by the attached signature.

The laboratory is accredited to EPA 7196A in Solid and Chemical Materials, per Washington State Department of Ecology this is approved for non-discharge water samples. The sample/ sample duplicate RPD agreement is not applicable if one or both results are elss than five times the MDL.

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Client: CH2M Hill Plateau Remediation Company Project/Site: CH2M Hill Chemical TestAmerica Job ID: 300-1399-1 SDG: WC0545

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Definitions/Glossary Client: CH2M Hill Plateau Remediation Company TestAmerica Job ID: 300-1399-1 Project/Site: CH2M Hill Chemical SDG: WC0545 **Qualifiers** HPLC/IC Qualifier **Qualifier Description** D The reported value is from a dilution. М Sample duplicate precision not met. U Analyzed for but not detected. **General Chemistry** Qualifier **Qualifier Description** Ū Analyzed for but not detected. В Estimated result. Result is less than the RL, but greater than MDL **Glossary** Abbreviation These commonly used abbreviations may or may not be present in this report. n Listed under the "D" column to designate that the result is reported on a dry weight basis %R Percent Recovery CFL Contains Free Liquid **CNF** Contains no Free Liquid DER Duplicate error ratio (normalized absolute difference) Dil Fac Dilution Factor DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC

MDA

EDL

MDC

MDL

ML NC

ND

PQL

QC

RL

RER

RPD TEF

TEQ

Decision level concentration

Minimum detectable activity

Minimum detectable concentration

Toxicity Equivalent Factor (Dioxin)
Toxicity Equivalent Quotient (Dioxin)

Not detected at the reporting limit (or MDL or EDL if shown)

Relative Percent Difference, a measure of the relative difference between two points

Reporting Limit or Requested Limit (Radiochemistry)

Estimated Detection Limit

Method Detection Limit

Minimum Level (Dioxin)

Practical Quantitation Limit

Not Calculated

Quality Control

Relative error ratio

Case Narrative

Client: CH2M Hill Plateau Remediation Company

Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-1399-1

SDG: WC0545

Job ID: 300-1399-1

Laboratory: TestAmerica Richland

Narrative

Job Narrative 300-1399-1

Comments

No additional comments.

Receipt

The samples were received on 11/5/2015 12:25 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 11.3° C.

HPLC/IC

Method 300.0: The sample duplicate in batch 300-1852 was outside control limits for Nitrate as N. No other analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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REV₁

SAMPLE ISSUE RESOLUTION

SIR NUM SIR16-090

REV NUM

DATE INITIATED 11/12/2015

SAMPLE EVENT INFORMATION

SAF NUM(S) X16-008

OPERABLE UNIT(S)

PROJECT(S) CERC16

SAMPLE EVENT TITLE(S) CERC16

LABORATORY TestAmerica Incorporated, Richland

SAMPLING INFORMATION

NUMBER OF SAMPLES 2

SAMPLE NUMBERS B33709, B33710

SAMPLE MATRIX WATER

COLLECTION DATE 11/5/2015 - 11/5/2015

SDG NUM WC0545

ISSUE BACKGROUND

CLASS Chain of Custody Issue (Field)

TYPE No Logbook Number

DESCRIPTION COC # X16-008-177, SAMPLE B33710, B33709.

No Logbook Number.

DISPOSITION

DESCRIPTION DOCUMENT AND CLOSE

JUSTIFICATION DOCUMENT AND CLOSE

SUBMITTED BY: Gayelyn Gibson DATE: 11/9/2015 ACCEPTED BY: Kirsten Killand DATE: 11/12/2015

DISPOSITION Disposal Method (e.	-	Relinquished By	Relinquished By	m white may	1			41399	CU20545	B33728 Y W 1/. 5./F	z	Sample No. Filter * Date	POSSIBLE SAMPLE HAZARDS/REMARKS ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1	Protocol CERCLA	Shipped To (Lab) TestAmerica II	Project Title AQUIFER TUI	SAF No. X16-008	Collector M whi	CH2MHill Plateau Remediation Company	
Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Date	Date	Dan	Sign Date/Ime						1/1/3	1113	Time	(ARKS) rations that are not regulated for transp. OE Order 458.1		TestAmerica Incorporated, Richland	AQUIFER TUBES, NOVEMBER 2015		to	iio er	
	Date/Time Received By	Date/Time Received By		2245	-	300-1399 COC				1x60-mL aG 7196_CR6: COMMON	1x60-mL aG 7196_CR6: COMMON	No/Type Container	oortation per 49 CFR / IATA Dangerous	Priority: 30 Days	Method of Shipment G	Logbook No. HNF-N-506	Sampling Origin Ha	Contact/Requester Ka	CHAIN OF CUS	
Disposed By				J. Bock, TARL						MMON	MON	Sample Analysis	SPECIAL INSTRUCTIONS	PRIORITY	GOVERNMENT VEHICLE	506 78 75	Hanford Site	Karen Waters-Husted	CHAIN OF CUSTODY/SAMPLE AN	
	Date/Time			1225	3					24 Hours	24 Hours	Holding Time	Hold Time	Offsite Property No.	Bill of Lading/Air Bill No.	Ice Chest No. N/A	Purchase Order/Charge Code	Telephone No. 509	VALYSIS REQUEST	
Date/Time		O = Oil V = Vegetation A = Air X = Other	Solid T = Shudge WI =	11						Cool <=6C	Cool <=6C	Preservative	Total Activity Exemption: Yes 🗹 No	N/A	vo. N/A		e Code 303064	509-376-4650	T X16-008-184	COC#

DISPOSITION Disposal Method (-	elinomiched By	Relinquished By	Relinquished By	M white many	1			PPE1#	SHSBJON		γ %	B33730 N W //~	AMPLE HALAKUSAR Radioactive Material at con ons but are not releasable p	Protocol CERCLA	Shipped To (Lab) TestAmerica	Project Title AQUIFER T	SAF No. X16-008	Collector M why Le	7	CH2MHill Plateau Remediation Company
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	PAIC THEIR		Date/Time	Date/Time	Date/Time							24 Hours	Holding Lime 24 Hours		te Property No.	Bill of Lading/Air Bill No.	Ice Chest No. N/A	Purchase Order/Charge Code	Telephone No. 509		NALYSIS REQUEST
Date/Time		O = Oil V = Vegetation A = Air X = Other	SludgeWater	nt DL =	Matrix * = Soil DS =							Cool <=6C	Preservative	Total Activity Exemption: Yes 💌 No		No. N/A	A	e Code 303064	509-376-4650	Page 1 of 1	T X16-008-185

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUES Contact/Requester Karen Waters-Histed Telephone No. 50 Sampling Origin Hanford Sile Parchase Order/Chary NOVEMBER 2015 Leghook No. HNI-N-S.06. 796/75/ Ec Chast No. Method of Shipment GOVER/MENT VEHICLE Bill of Lading/Air Bill Priority: 30 Days PRIORITY Offsite Property No. SPECIAL INSTRUCTIONS Holding Time Sampling origin SPECIAL INSTRUCTIONS Holding Time Supplied for transportation per 49 CPR / IATA Daugarous Time No/Type Container Sample Analysis Holding Time 1x60-mL aG 7196_CR6: COMMON Print Sign Dato Time 1x60-mL aG 7196_CR6: COMMON 1x60-mL aG 7196_CR6: COMMON 24 Hours 1x60-mL aG 7196_CR6: COMMON 1x60-mL aG 1x60-mL aG 7196_CR6: COMMON 1x60-mL aG 1x6	Date/Time	Disposed By	cess)	lab procedure, used in pro-	m to customer, per	Disposal Method (e.g., Retur	DISPOSITION
CHAIN OF CUSTODY/SAMPILE ANALYSIS REQUEST Contact/Requester Career Waters-Hasted Telephone No. 599-376-4659	Date/Time Matrix SE = Sodiment SO = Solid SL = Sludge W = Water O = Oil A = Air						FINAL SAMPLE
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST CONTINUE	Date/Time S-(1/2) S = Soil Date/Time SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air		Received By	Date/Time			Relinquished By
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST Co	Date/Time S-1 1 22 S = Soil Date/Time SE = Sediment SO = Solid SL = Sludge		Received By	Date/Time			Relinquished By
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST ContactRequester Karen Waters-Histled Telephone No. 509-376-4650 Sampling Origin Hanford Site NOVEMBER 2015 Legbook No. HNF-N-506 '7-20/7 V Priority: 30 Days PRIORITY PRIORITY SPECIAL INSTRUCTIONS Hold Time Total Activity Exempt 46SS. Time No/Type Commainer Sample Analysis Holding Time Property No. N/A Time No/Type Commainer Sample Analysis Holding Time Property No. 124 Hours Commainer Property No. 124 Hours Commainer Property No. 125 CRS. COMMON Received By Phin Sam Date/Time Commainer Commainer Commainer Print Sample Analysis Commainer Co	Date/Time Matrix S-1 1 (225 S = Soil S = So		Received By	Date/Time	*.		Relinquished By
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C.O.		MMON	7196_CR6: CO	1x60-mL aG	1000	Y W /1-575-	B33722
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CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST Contact/Requester Karen Waters-Husted C.O. Contact/Requester Karen Waters-Husted Contact/Requester Karen Waters-Husted		anford Site		Sampling		X16-008	SAF No.
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		aren Waters-Husted		Contact	126	white ch	Collector ~
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Pa						
	ALYSIS REQUEST	STODY/SAMPLE	N OF CUS	СНАІ		CH2MHill Plateau Remediation Company	CH2MHill Pk Company

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11/17/2015

PRINTED ON 10/5/2015	FINAL SAMPLE DISPOSITION	Relinquished By	Relinquished By	Relinquished By	Mwhitem			1	£ C:	B33734	B33733	Sample No.	** ** Contains Radioa. Goods Regulations but	POSSIBLE SAMPI	Protocol	Shipped To (Lab)	Project Title	SAF No.	Collector /	Company	CHAMIN DI
015	Disposal Method (e.g., R				now Dia			# 1399	Sheara	11-5-11 M A	N W 11-5-17	Filter * Date	** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1	POSSIBLE SAMPLE HAZARDS/REMARKS	CERCLA	TestAmerica Incorporated, Richland	AQUIFER TUBE	X16-008	m white	The Annual Control	CH7MH; III Plotogu Domodiction
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	procedure, used in proce	Date/Time	Date/Time	Date/Time	Date/Time/228					1x60-mL aG	1x60-mL aG	No/Type Container	or transportation per 49 (Priority:		2015 Logbook No.	Sampling Origin	Contact/l	CHAI	1
FSR	ess)	Received By	Received By	Received By						7196_CR6: COMMON	7196_CR6: COMMON		CFR / IATA Dangerous		30 Days	Method of Shipment GC			Contact/Requester Kar	N OF CUST	1
FSR 1D = FSR7670	Disposed By				Print Sign 3. Bock, TARL					MON	MON	Sample Analysis		SPECIAL INSTRUCTIONS	PRIORITY	GOVERNMENT VEHICLE	HNF-N-506 78 / 75	Hanford Site	Karen Waters-Husted	CHAIN OF CUSTODY/SAMPLE AN	
		Date/Time	Date/Time W O A	Date/Time SO SIL	1225					24 Hours	24 Hours	Holding Time		Hold Time Total	Offsite Property No.	Bill of Lading/Air Bill No.	Ice Chest No. N/A	Purchase Order/Charge Code	Telephone No. 509-3	ALYSIS REQUEST	
A-6004-842 (REV 2)	Date/Time		= Water L = Liquid = Oil V = Vegetation = Air X = Other	T =	ttrix *					Cool <=6C	Cool <=6C	Preservative		Total Activity Exemption: Yes 🗸 No 🗌	N/A	N/A		ode 303064	509-376-4650	X16-008-186 Page 1 of 1	C.O.C.#

FINAL SAMPLE Disposal N DISPOSITION	Relinquished By	Relinquished By	Relinquished By Chothe Print MANAMINA MCL Relinquished By		66614 Shspon	B33724 N W	B33725 Y W	Sample No. Filter *	POSSIBLE SAMPLE HAZARDS/REMARKS *** *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1	Protocol CERCLA	Shipped To (Lab) TestAm	Project Title AQUIF	SAF No. X16-008	Collector M w	CH2MHill Platean Remediation Company
Method (e.g., Return to customs			X Sign		У V)	11-615 0550	1.51 0850	Date Time	DS/REMARKS at concentrations that are not re able per DOE Order 458.1	A	TestAmerica Incorporated, Richland	AQUIFER TUBES, NOVEMBER 2015	∞	shiha	mediation
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ocess)	Received By	Received By	Received By Received By			7196_CR6: COMMON	7196_CR6: COMMON		9 CFR / IATA Dangerous	30 Days	Method of Shipment GOV	k No. HNF-N-506	Sampling Origin Hanfo	Contact/Requester Karen	IN OF CUSTO
Disposed By			Print Sign J. Bock, TARL			SN.)N	Sample Analysis	SPECIAL INSTRUCTIONS	PRIORITY	GOVERNMENT VEHICLE	36/25	Hanford Site	Karen Waters-Husted	CHAIN OF CUSTODY/SAMPLE AN
	Date/Time	Date/Time	Date/Time //・5~//「/1235 Date/Time			24 Hours	24 Hours	Holding Time	Hold Time	Offsite Property No.	Bill of Lading/Air Bill No.	Ice Chest No. N/A	Purchase Order/Charge Code	Telephone No. 50	ALYSIS REQUEST
Date/Time		SL = Slndge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquids SO = Solid T = Tissue			Cool <=6C	Cool <=6C	Preservative	Total Activity Exemption: Yes 🗹	N/A	No. N/A	A	e Code 303064	509-376-4650	C.O.C.# X16-008-183 Page 1 of 1

X = Other							
П	D.	the second secon	Disposed By	used in process)	Disposal Method (e.g., Return to customer, per lab procedure, used in process)		FINAL SAMPLE
II		Date/Time		me Received By	Date/Time	.:	Relinquished By
	B II II	Date/Time		me Received By	Date/fime		Relinquished By
T = Tissue WI = Wipe	SD = Solid SO = Solid SL = Sludge	Date/Time		me Received By	Date/fime		Relinquished By
atrix * DS =	= Soil	1017.17.1325	J. Bock, TARL		رر جار کری ایمنور السو المعرور السو		SWA) EM
						#1399	中一
						MCOSYS	ري در
Cool <=6C		24 Hours	OMMON	1x60-mL aG 7196_CR6: COMMON	0857 1x60-	N W 11-1-43	B33709
Cool <=6C		24 Hours	OMMON	1x60-mL aG 7196_CR6: COMMON	0857 1x60-	86.5-11 M A	B33710
Preservative		Holding Time	Sample Analysis	Container	Time No/Type Container	Filter * Date	Sample No.
emption: Yes 🖳 No	Total Activity Exemption:	Hold Time	OUS SPECIAL INSTRUCTIONS	tion per 49 CFR / IATA Danger	S that are not regulated for transport ler 458.1	*** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1	* ** Contains Rad Goods Regulations
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	II No. NI/A	Bill of Lading/Air Bill No.	GOVERNMENT VEHICLE	Method of Shipment	orated Richland	zarreg	Shipped To (Lab)
	N/A	Ice Chest No.	HNF-N-506 /	Logbook No. HNF-	AQUIFER TUBES, NOVEMBER 2015	AQUIFER TUBES,	Project Title
303064		Purchase Order/Charge Code	Hanford Site	Sampling Origin	-	X16-008	SAF No.
	509-376-4650	Telephone No.	Karen Waters-Husted	Contact/Requester]	ChpRc	n white	Collector /
Page 1 of 1		. 1				-	
X16-008-177		ALYSIS REQUEST	CHAIN OF CUSTODY/SAMPLE ANA	CHAIN OF CU		CH2MHill Plateau Remediation Company	CH2MHill I Company

	[+]	Relinquished By	лоничина <i>гд</i>	Relinguished Ry	Neumquistieu Dy	Simulation of the state of the						7	# 1299	12.5.5.5.V	833719 Y W /1 - 5 - 17	z	Sample No. Filter * Date	-	POSSIBLE SAMPLE HAZARDS/REMARKS *** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1	Protocol CERCLA	Shipped To (Lab) TestAmerica Inc	Project Title AQUIFER TUB	SAF No. X16-008	Collector M white		CH2MHill Plateau Remediation Company
	Disposal Method (e.g., Return to customer, per lab procedure, used in process)				-	11-5	Sign		\						17 /005	1) 1009	Time		IRKS ions that are not regulated for Corder 458.1		TestAmerica Incorporated, Richland	AQUIFER TUBES, NOVEMBER 2015				08
	rocedure, used in proce	Date/Time	Datorimo	Date/Time	Date/Lime	seri mis	Date/Time			,					1x60-mL aG	1x60-mL aG	No/Type Container		transportation per 49 (Priority:	Method o)15 Logbook No.	Sampling Origin	Contact/l		CHAI
	ess)	Received By	ECONTACT DA	Received By	Kecelyed by	1385	Received By								7196_CR6: COMMON	7196_CR6: COMMON			CFR / IATA Dangerou	30 Days	Method of Shipment G			Contact/Requester Ka		N OF CUS
	Disposed By					J. Bock, TARL	Print Sign								MMON	MMON	Sample Analysis	•	SPECIAL INSTRUCTIONS	PRIORITY	GOVERNMENT VEHICLE	HNF-N-506 78/ 75	1	Karen Waters-Husted		CHAIN OF CUSTODY/SAMPLE AN
		Date/Time	Dato i mic	Data/T	Date/Ime	11-5-17	Date/Time										Ho		Hold Time	Offsite Property No.	Bill of Lac	Ice Chest No.	Purchase	Telephone No.		ALYSIS REQUEST
-		ime	> 0	W SE	-	S S S	ime								24 Hours	24 Hours	Holding Time		Total /		Bill of Lading/Air Bill No.	No. N/A	Purchase Order/Charge Code			EQUEST
	Date/Time		X	= Water L = Liquid	T T	= Soil DS = Drum Solids = Sediment DI = Drum Limids	Matrix *			•					Cool <=6C	Cool <=6C	Preservative		Total Activity Exemption: Yes 💌 No 📗	N/A	N/A		de 303064	509-376-4650	Page 1 of 1	X16-008-181

PRINTED ON 10/5/2015	FINAL SAMPLE 1	Relinquished By	kelmquished By	roundmonerary	Reimquished By Chille				•	#1399	SASOON		B33717 N	Sample No. Filter	** ** Contains Radioactive Goods Regulations but are	POSSIBLE SAMPLE)	Protocol (Shipped To (Lab)	Project Title	SAF No.	Collector M		CH2MHill Plateau Remediation Company	
	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	·	-		nall XIII		-			999	SYS	÷	N11-511	er * Date	** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1	POSSIBLE SAMPLE HAZARDS/REMARKS	CERCLA	TestAmerica Incorporated, Richland	AQUIFER TUBES, NOVEMBER 2015	X16-008	white		au Remediation	
	n to customer, per lab p				/1-			·				·	1009	Time	hat are not regulated for er 458.1			orated, Richland	NOVEMBER 20					
	rocedure, used in proces	Date/Time	Date/Iime	Date/ Lille	Date/Time \$-15 / 125	2							1x500-mL P	No/Type Container	transportation per 49 C		Priority:		015 Logbook No.	Sampling Origin	Contact/Requester		CHAIN	
FSR	ss)	Received By	Received By	rediver by	Received By								300.0_ANIONS_IC: COMMON		FR / IATA Dangerous		30 Days	Method of Shipment GC					OF CUST	
FSR ID = FSR7665	Disposed By				J. Bock, TARL	A THE STATE OF THE							C: COMMON	Sample Analysis		SPECIAL INSTRUCTIONS	PRIORITY	GOVERNMENT VEHICLE	HNF-N-506 28/25	Hanford Site	Karen Waters-Husted		CHAIN OF CUSTODY/SAMPLE ANALYSIS REOUEST	
	ed By				Sign 11											TIONS Hold Time		CLE					E ANALY	
		Date/Time	Date/Time	Date Time	Date/Time								48 Hours	Holding Time		Гіше	Offsite Property No.	Bill of Lading/Air Bill No.	Ice Chest No.	Purchase Order/Charge Code	Telephone No.		SIS REOUE	
A-6004-84	Da				S = Soil SE = Sediment									e		Total Activity Exemption: Yes	. N/A	Bill No. N/A	N/A		509-376-4650			
A-6004-842 (REV 2)	Date/Time		V = Vegetation X = Other	. WI =	Matrix * DS = Drum Solids ent DL = Drum Liquids								Cool <=6C	Preservative		emption: Yes 🗸 No [303064		Page 1 of 1	C.O.C.# X16-008-180	

																						ì
PRINTED ON 10/5/2015	FINAL SAMPLE DISPOSITION	Relinquished By	Relinquished By	Relinquished By	mmwhile				,	中	ر ع ()	B33708	Sample No.	POSSIBLE SAMP *** ** Contains Radioa Goods Regulations bu	Protocol	Shipped To (Lab)	Project Title	SAF No.	Collector M		CH2MHill Pl. Company	1 2
2015	Disposal Method (e.g., Ret			-	Mazy S				-	ずしてのの	SHSOSO	N W 11-5-13	Filter * Date	POSSIBLE SAMPLE HAZARDS/REMARKS *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1	CERCLA	TestAmerica Incorporated, Richland	AQUIFER TUBES	X16-008	white cheac		CH2MHill Plateau Remediation Company	5
	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	I	1	(1580	Time No/	KS s that are not regulated for tra		porated, Richland	AQUIFER TUBES, NOVEMBER 2015		250			7 8 9
	edure, used in process	Date/Time	Date/Time	Date/Time	Date/Time							1x500-mL P	No/Type Container	nsportation per 49 CF	Priority:	Method of Shipment	5 Logbook No.	Sampling Origin	Contact/Requester		CHAIN	10
FSR)	Received By	Received By	Received By	Received By							300.0_ANIONS_IC: COMMON		R / IATA Dangerous	30 Days		• HNF-N-506 78				OF CUST	1
FSR ID = FSR7663	Disposed By				Print Sign J. Bock, TARL							C: COMMON	Sample Analysis	SPECIAL INSTRUCTIONS	PRIORITY	GOVERNMENT VEHICLE	50678175	Hanford Site	Karen Waters-Husted		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	
		Date/Time	Date/Time	Date/Time	Date/Time							48 Hours	Holding Time	Hold Time	Offsite Property No.	Bill of Lading/Air Bill No.	Ice Chest No.	Purchase Order/Charge Code	Telephone No.		(ALYSIS REQUI	AND COMMENTS OF THE PROPERTY O
A-6004-84	D		W = Water O = Oil A = Air	SE = Sediment SO = Solid SL = Shudge	= Soil	- Approximate the second secon							ie .	Total Activity Exemption:	o. N/A	Bill No. N/A	N/A		509-376-4650		EST	A MANAGEMENT AND
A-6004-842 (REV 2)	Date/Time		L = Liquid V = Vegetation X = Other		trix * DS =							Cool <=6C	Preservative	comption: Yes 🗹 No 🗌				303064	,	Page 1 of 1	C.O.C.# X16-008-176	

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11/17/2015

		Detec	tion Sur	nmary	/			
Client: CH2M Hill Plateau Remediat Project/Site: CH2M Hill Chemical	ion Comp	any		-		Test	America Job	ID: 300-1399-1 SDG: WC0545
Client Sample ID: B33727						Lah	Sample ID	: 300-1399-1
No Detections.						Lub		. 000-1000-1
Client Sample ID: B33728						Lab	Sample ID	: 300-1399-2
No Detections.							•	
Client Sample ID: B33730						Lab	Sample ID	: 300-1399-3
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Cr (VI)	0.0030		0.0040	0.0015			7196A	Total/NA
Client Sample ID: B33731						Lab	Sample ID	: 300-1399-4
Analyte	Result	Qualifier	RL	MDI	Unit	Dil Fac	D Method	Prep Type
Cr (VI)	0.0033		0.0040	0.0015			7196A	Total/NA
Client Sample ID: B33722						Lab	Sample ID	: 300-1399-5
No Detections.							•	
Client Sample ID: B33721						Lab	Sample ID	: 300-1399-6
No Detections.							•	
Client Sample ID: B33733						Lab	Sample ID	: 300-1399-7
No Detections.								
Client Sample ID: B33734						Lab	Sample ID	: 300-1399-8
No Detections.								
Client Sample ID: B33725						Lab	Sample ID	: 300-1399-9
No Detections.								
Client Sample ID: B33724						Lab S	ample ID:	300-1399-10
No Detections.								
Client Sample ID: B33710						Lab S	ample ID:	300-1399-11
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Cr (VI)	0.0046		0.0040	0.0015	mg/L	1	7196A	Total/NA
Client Sample ID: B33709						Lab S	ample ID:	300-1399-12
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Method	Prep Type
Cr (VI)	0.0056		0.0040	0.0015	mg/L		7196A	Total/NA
Client Sample ID: B33718						Lab S	ample ID:	300-1399-13
No Detections.								

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: CH2M Hill Plateau Remediation Company

Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-1399-1

SDG: WC0545

Client Sample ID: B33719 Lab Sample ID: 300-1399-14

No Detections.

Client Sample ID: B33717

Lab Sample ID: 300-1399-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.4	D	0.40	0.20	mg/L	2	_	300.0	Total/NA
Nitrate as N	0.70	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.13	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	39	D	0.50	0.25	mg/L	2		300.0	Total/NA

Client Sample ID: B33708 Lab Sample ID: 300-1399-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D N	/lethod	Prep Type
Chloride	13	D	0.40	0.20	mg/L	2	_ 3	800.0	Total/NA
Nitrate as N	4.5	D	0.056	0.028	mg/L	2	3	00.0	Total/NA
Fluoride	0.21	D	0.10	0.050	mg/L	2	3	00.0	Total/NA
Sulfate	120	D	1.3	0.63	mg/L	5	3	00.0	Total/NA

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			Sample	Result	ts				
Client: CH2M Hill Plateau Remedia Project/Site: CH2M Hill Chemical	tion Comp	any					TestAmerio	a Job ID: 300- SDG: V	
Client Sample ID: B33727 Date Collected: 11/05/15 11:13 Date Received: 11/05/15 12:25							Lab Samp	ole ID: 300-1 Matrix	399-1 : Water
General Chemistry Analyte		Qualifier	RL	MDL		<u>D</u>	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			11/05/15 14:41	
Client Sample ID: B33728 Date Collected: 11/05/15 11:13 Date Received: 11/05/15 12:25							Lab Samp	ole ID: 300-1 Matrix	1399-2 : Water
General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			11/05/15 14:42	1
Client Sample ID: B33730 Date Collected: 11/05/15 10:50 Date Received: 11/05/15 12:25							Lab Samp	ole ID: 300-1 Matrix	1399-3 : Water
General Chemistry									
Analyte Cr (VI)	0.0030	Qualifier B	0.0040	MDL 0.0015		D	Prepared	Analyzed 11/05/15 14:42	Dil Fac
Client Sample ID: B33731 Date Collected: 11/05/15 10:50 Date Received: 11/05/15 12:25							Lab Samp	ole ID: 300-1 Matrix	1399-4 : Water
General Chemistry Analyte	Posult	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0033		0.0040	0.0015		_ <u>-</u>		11/05/15 14:42	1
Client Sample ID: B33722 Date Collected: 11/05/15 10:00 Date Received: 11/05/15 12:25							Lab Samp	ole ID: 300-1 Matrix	1399-5 : Water
General Chemistry									
Analyte Cr (VI)	0.0015	Qualifier U	RL 0.0040	MDL 0.0015		D	Prepared	Analyzed 11/05/15 14:43	Dil Fac
Client Sample ID: B33721 Date Collected: 11/05/15 10:00 Date Received: 11/05/15 12:25							Lab Samp	ole ID: 300-1 Matrix	399-6 : Water
General Chemistry									
Analyte Cr (VI)	Result 0.0015	Qualifier U	RL 0.0040	MDL 0.0015		D	Prepared	Analyzed 11/05/15 14:43	Dil Fac
Client Sample ID: B33733							I ah Samr	le ID: 300-1	399-7
Date Collected: 11/05/15 10:41 Date Received: 11/05/15 12:25									: Water
General Chemistry Analyte	Posul4	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015		0.0040	0.0015			- i repareu	11/05/15 14:46	1

Client: CH2M Hill Plateau Remediat Project/Site: CH2M Hill Chemical	ion Comp		Sample				TestAmeric	ca Job ID: 300 SDG: V	
Client Sample ID: B33734 Date Collected: 11/05/15 10:41 Date Received: 11/05/15 12:25						ı	₋ab Samp	ole ID: 300-1 Matrix	1399-8 : Water
General Chemistry Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	Ū	0.0040	0.0015	mg/L			11/05/15 14:46	1
Client Sample ID: B33725 Date Collected: 11/05/15 09:50 Date Received: 11/05/15 12:25						I	_ab Samp	ole ID: 300-1 Matrix	1 399- 9 : Water
General Chemistry Analyte	Popult	Qualifier	RL	MDI	Unit	D	Bronarad	Analyzod	Dil Fac
Cr (VI)	0.0015		0.0040	0.0015			Prepared	Analyzed 11/05/15 14:47	1
Client Sample ID: B33724 Date Collected: 11/05/15 09:50 Date Received: 11/05/15 12:25						L	ab Sample	e ID: 300-13 Matrix	399-10 : Water
General Chemistry	Beault	Ovalifier	DI.	MDI	l lmi4	Б	Droporod	Analyzad	Dil Foo
Analyte Cr (VI)	0.0015	Qualifier U	RL 0.0040	0.0015	mg/L	D	Prepared	Analyzed 11/05/15 14:47	Dil Fac
Client Sample ID: B33710 Date Collected: 11/05/15 08:57 Date Received: 11/05/15 12:25						La	ab Sample	e ID: 300-13 Matrix	399-11 : Wate
General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0046		0.0040	0.0015	mg/L			11/05/15 14:47	1
Client Sample ID: B33709 Date Collected: 11/05/15 08:57 Date Received: 11/05/15 12:25						Li	ab Sample	e ID: 300-13 Matrix	3 99-12 : Water
General Chemistry	- "					_			5
Analyte Cr (VI)	0.0056	Qualifier		0.0015	mg/L	D	Prepared	Analyzed 11/05/15 14:48	Dil Fac
Client Sample ID: B33718 Date Collected: 11/05/15 10:09 Date Received: 11/05/15 12:25						La	ab Sample	e ID: 300-13 Matrix	399-13 : Wate
General Chemistry									
Analyte Cr (VI)	0.0015	Qualifier U	RL 0.0040	MDL 0.0015	Unit mg/L	D	Prepared	Analyzed 11/05/15 14:48	Dil Fac
Client Sample ID: B33719						La	ab Sample	e ID: 300-13	399-14
Date Collected: 11/05/15 10:09 Date Received: 11/05/15 12:25									: Water
General Chemistry	Dogl4	Qualifier	RL	MDI	Unit	г.	Dronavad	Apolyeed	Dil Fa-
Analyte Cr (VI)	0.0015			0.0015		D	Prepared	Analyzed 11/05/15 14:51	Dil Fac

Matrix: Water

Client Sample Results

Client: CH2M Hill Plateau Remediation Company

TestAmerica Job ID: 300-1399-1

Project/Site: CH2M Hill Chemical SDG: WC0545

Client Sample ID: B33717 Lab Sample ID: 300-1399-15

Date Collected: 11/05/15 10:09 Date Received: 11/05/15 12:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.4	D	0.40	0.20	mg/L			11/05/15 13:48	2
Nitrate as N	0.70	D	0.056	0.028	mg/L			11/05/15 13:48	2
Fluoride	0.13	D	0.10	0.050	mg/L			11/05/15 13:48	2
Nitrite as N	0.038	U	0.076	0.038	mg/L			11/05/15 13:48	2
Sulfate	39	D	0.50	0.25	mg/L			11/05/15 13:48	2

Client Sample ID: B33708 Lab Sample ID: 300-1399-16

Date Collected: 11/05/15 08:57 Matrix: Water

Date Received: 11/05/15 12:25

Method: 300.0 - Anions Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13	D	0.40	0.20	mg/L			11/05/15 14:03	2
Nitrate as N	4.5	D	0.056	0.028	mg/L			11/05/15 14:03	2
Fluoride	0.21	D	0.10	0.050	mg/L			11/05/15 14:03	2
Nitrite as N	0.038	U	0.076	0.038	mg/L			11/05/15 14:03	2
Sulfate	120	D	1.3	0.63	mg/L			11/05/15 14:27	5

QC Sample Results

Client: CH2M Hill Plateau Remediation Company

Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-1399-1

SDG: WC0545

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-1852/5

Matrix: Water

Analyte

Nitrate as N

Nitrite as N

Analysis Batch: 1852

Client Sample ID: Method Blank
Prep Type: Total/NA

мв мв Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 0.014 U 0.028 0.014 mg/L 11/05/15 11:40 0.038 0.019 U 0.019 mg/L 11/05/15 11:40

Lab Sample ID: LCS 300-1852/6

Matrix: Water

Analysis Batch: 1852

Client Sample ID	Lab Control S	ample
	Prep Type: To	tal/NA

LCS LCS Spike %Rec. Analyte Added Result Qualifier %Rec Unit Limits Nitrate as N 2.26 2.38 mg/L 105 80 - 120 Nitrite as N 3.04 3.23 mg/L 106 80 - 120

Lab Sample ID: 300-1394-A-5 MS

Matrix: Water

Analysis Batch: 1852

Client Sa	mple ID:	Matrix Sp	oike
	Pren Ty	me: Total	/NA

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Nitrate as N	0.38	D M	0.452	0.756	D	mg/L		83	75 - 125	
Nitrite as N	0.038	U	0.609	0.584	D	mg/L		96	75 - 125	

DU DU

0.310 D M

0.038 U

Result Qualifier

Unit

mg/L

mg/L

Lab Sample ID: 300-1394-A-5 DU

Matrix: Water

Analyte

Nitrate as N

Nitrite as N

Analysis Batch: 1852

Client	Samp	le ID:	Duplicate	
	Prep	Type	: Total/NA	

			RPD
D		RPD	Limit
	 	21	20
		NC	20

Lab Sample ID: MB 300-1853/5

Matrix: Water

Analysis Batch: 1853

Client Sample	ID: Method Blank
D	Turner Tetal/NIA

Prep Type: Total/NA

MB MB

Sample Sample

0.38 D M

0.038 U

Result Qualifier

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.10	U	0.20	0.10	mg/L			11/05/15 11:40	1
Fluoride	0.025	U	0.050	0.025	mg/L			11/05/15 11:40	1
Sulfate	0.13	U	0.25	0.13	mg/L			11/05/15 11:40	1

Lab Sample ID: LCS 300-1853/6

Matrix: Water

Analysis Batch: 1853

Client Sample ID:	Lab Control Sample
	Prep Type: Total/NA

-	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	16.0	16.7		mg/L		104	80 - 120	
Fluoride	4.00	4.20		mg/L		105	80 - 120	
Sulfate	20.0	20.9		mg/L		104	80 - 120	

QC Sample Results

Client: CH2M Hill Plateau Remediation Company

Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-1399-1

Client Sample ID: Duplicate Prep Type: Total/NA

SDG: WC0545

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 300-1394-A-5 MS **Client Sample ID: Matrix Spike Matrix: Water** Prep Type: Total/NA

Analysis Batch: 1853

•	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	1.2	D	3.20	4.38	D	mg/L		99	75 - 125	· ·
Fluoride	0.16	D	0.800	0.936	D	mg/L		97	75 - 125	
Sulfate	12	D	4.00	16.2	D	mg/L		105	75 - 125	

Lab Sample ID: 300-1394-A-5 DU

Matrix: Water

Analysis Ratch: 1853

Analysis Balcii. 1000	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Chloride	1.2	D	1.14	D	mg/L		 5	20
Fluoride	0.16	D	0.165	D	mg/L		1	20
Sulfate	12	D	11.9	D	mg/L		0.7	20

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-1863/3

Matrix: Water

Analysis Batch: 1863

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			11/05/15 14:38	1

Lab Sample ID: LCS 300-1863/4

Matrix: Water

Analysis Batch: 1863

-	Spike		LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Cr (VI)	0.250	0.255	-	ma/L	_	102	80 - 120	_

Lab Sample ID: 300-1399-1 MS

Matrix: Water

Analysis Batch: 1863

Analysis Batem 1000	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Cr (VI)	0.0015	U	0.0500	0.0519		mg/L		104	85 - 115	

Lab Sample ID: 300-1399-1 DU

Matrix: Water

Analysis Batch: 1863

, ,	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Cr (VI)	0.0015	U	 0.0015	U	mg/L		 NC	20

Client Sample ID: Method Blank Prep Type: Total/NA

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Client Sample ID: B33727

Prep Type: Total/NA

Client Sample ID: B33727 Prep Type: Total/NA

QC Association Summary

Client: CH2M Hill Plateau Remediation Company

Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-1399-1

SDG: WC0545

HPLC/IC

Analysis Batch: 1852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-1394-A-5 DU	Duplicate	Total/NA	Water	300.0	
300-1394-A-5 MS	Matrix Spike	Total/NA	Water	300.0	
300-1399-15	B33717	Total/NA	Water	300.0	
300-1399-16	B33708	Total/NA	Water	300.0	
LCS 300-1852/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-1852/5	Method Blank	Total/NA	Water	300.0	

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Analysis Batch: 1853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-1394-A-5 DU	Duplicate	Total/NA	Water	300.0	
300-1394-A-5 MS	Matrix Spike	Total/NA	Water	300.0	
300-1399-15	B33717	Total/NA	Water	300.0	
300-1399-16	B33708	Total/NA	Water	300.0	
300-1399-16	B33708	Total/NA	Water	300.0	
LCS 300-1853/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-1853/5	Method Blank	Total/NA	Water	300.0	

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General Chemistry

Analysis Batch: 1863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-1399-1	B33727	Total/NA	Water	7196A	_
300-1399-1 DU	B33727	Total/NA	Water	7196A	
300-1399-1 MS	B33727	Total/NA	Water	7196A	
300-1399-2	B33728	Total/NA	Water	7196A	
300-1399-3	B33730	Total/NA	Water	7196A	
300-1399-4	B33731	Total/NA	Water	7196A	
300-1399-5	B33722	Total/NA	Water	7196A	
300-1399-6	B33721	Total/NA	Water	7196A	
300-1399-7	B33733	Total/NA	Water	7196A	
300-1399-8	B33734	Total/NA	Water	7196A	
300-1399-9	B33725	Total/NA	Water	7196A	
300-1399-10	B33724	Total/NA	Water	7196A	
300-1399-11	B33710	Total/NA	Water	7196A	
300-1399-12	B33709	Total/NA	Water	7196A	
300-1399-13	B33718	Total/NA	Water	7196A	
300-1399-14	B33719	Total/NA	Water	7196A	
LCS 300-1863/4	Lab Control Sample	Total/NA	Water	7196A	
MB 300-1863/3	Method Blank	Total/NA	Water	7196A	

				Lab	Chronic	ele				
Client: CH2M F			Company					TestAmerica		
Project/Site: CI	H2M HIII Che	emicai							SDC	9: WC0545
Client Samp	ole ID: B3	3727						Lab Sample	e ID: 30	0-1399-1
Date Collected	d: 11/05/15	11:13						-	Ma	trix: Wateı
Date Received	d: 11/05/15 1	12:25								
_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			1863	11/05/15 14:41	AMC	TAL RCH
Client Samp	ole ID: B3	3728						Lab Sample	e ID: 30	0-1399-2
Date Collected								•		trix: Wate
Date Received	d: 11/05/15 1	12:25								
_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			1863	11/05/15 14:42	-	TAL RCH
Client Come	ala ID. Da	2720						I oh Comple	. ID. 20	0.4200
Client Samp								Lab Sample		
Date Collected		10:50							Ma	trix: Wate
				Dil	Initial	Final	Batch	Prepared		
Prep Type	d: 11/05/15 1 Batch Type	12:25 Batch Method	Run	Factor	Initial Amount	Final Amount	Number	or Analyzed	Analyst	Lab
Date Received	d: 11/05/15 1 Batch	12:25 Batch	Run					•	•	Lab TAL RCH
Oate Received Prep Type Total/NA	Batch Type Analysis	12:25 Batch Method 7196A	Run	Factor			Number	or Analyzed	AMC	TAL RCH
Prep Type Total/NA Client Samp	Batch Type Analysis Ole ID: B3 d: 11/05/15	12:25 Batch Method 7196A 3731 10:50	Run	Factor			Number	or Analyzed 11/05/15 14:42	AMC = ID: 30	TAL RCH
Prep Type Total/NA Client Samp	Batch Type Analysis DIE ID: B3: d: 11/05/15	Batch Method 7196A 3731 10:50 12:25	Run	Factor 1	Amount	Amount	Number 1863	or Analyzed 11/05/15 14:42 Lab Sample	AMC = ID: 30	TAL RCH
Prep Type Total/NA Client Samp Date Collected Date Received	Batch Type Analysis DIE ID: B3: d: 11/05/15 1 d: 11/05/15 1	Batch Method 7196A 3731 10:50 12:25 Batch		Factor 1	Amount	Amount	Number 1863 Batch	or Analyzed 11/05/15 14:42 Lab Sample Prepared	AMC P ID: 30 Ma	TAL RCH 0-1399-4 trix: Wate
Prep Type Total/NA Client Samp	Batch Type Analysis DIE ID: B3: d: 11/05/15	Batch Method 7196A 3731 10:50 12:25	Run	Factor 1	Amount	Amount	Number 1863	or Analyzed 11/05/15 14:42 Lab Sample	AMC AMC AMC AMC Analyst	TAL RCH
Prep Type Total/NA Client Samp Date Collected Date Received Prep Type Total/NA	Batch Type Analysis DIE ID: B3: d: 11/05/15 d: 11/05/	Batch Method 7196A 3731 10:50 12:25 Batch Method 7196A		Factor 1 Dil Factor	Amount	Amount	Number 1863 Batch Number	or Analyzed 11/05/15 14:42 Lab Sample Prepared or Analyzed 11/05/15 14:42	AMC Analyst AMC	O-1399-4 trix: Wate
Prep Type Total/NA Client Samp Date Collected Date Received Prep Type Total/NA Client Samp	Batch Type Analysis DIE ID: B3: d: 11/05/15 1 d: 11/05/15 2 Batch Type Analysis DIE ID: B3:	Batch Method 7196A 3731 10:50 12:25 Batch Method 7196A 3722		Factor 1 Dil Factor	Amount	Amount	Number 1863 Batch Number	or Analyzed 11/05/15 14:42 Lab Sample Prepared or Analyzed	AMC Analyst AMC Analyst AMC	O-1399-4 trix: Wate
Prep Type Total/NA Client Samp Date Collected Date Received Prep Type Total/NA Client Samp Date Collected Date Collected Date Collected	Batch Type Analysis DIE ID: B3: d: 11/05/15 d: 11/05/15 d: 11/05/15 d: Analysis DIE ID: B3: d: 11/05/15 d: 11/05	Batch Method 7196A 3731 10:50 12:25 Batch Method 7196A 3722 10:00		Factor 1 Dil Factor	Amount	Amount	Number 1863 Batch Number	or Analyzed 11/05/15 14:42 Lab Sample Prepared or Analyzed 11/05/15 14:42	AMC Analyst AMC Analyst AMC	O-1399-4 trix: Wate
Prep Type Total/NA Client Samp Date Collected Date Received Prep Type Total/NA Client Samp Date Collected Date Collected Date Collected	Batch Type Analysis DIE ID: B3: d: 11/05/15 d: 11/05/15 d: 11/05/15 d: Analysis DIE ID: B3: d: 11/05/15 d: 11/05	Batch Method 7196A 3731 10:50 12:25 Batch Method 7196A 3722 10:00		Factor 1 Dil Factor	Amount	Amount	Number 1863 Batch Number	or Analyzed 11/05/15 14:42 Lab Sample Prepared or Analyzed 11/05/15 14:42	AMC Analyst AMC Analyst AMC	O-1399-4 trix: Wate
Prep Type Total/NA Client Samp Date Collected Date Received	Batch Type Analysis DIE ID: B3: d: 11/05/15 d: 11/05/	Batch Method 7196A 3731 10:50 12:25 Batch Method 7196A 3722 10:00 12:25		Pactor Dill Factor 1	Amount Initial Amount	Final Amount	Number 1863 Batch Number 1863	or Analyzed 11/05/15 14:42 Lab Sample Prepared or Analyzed 11/05/15 14:42 Lab Sample Prepared or Analyzed or Analyzed	Analyst AMC Analyst AMC Analyst Analyst	CAL RCH O-1399-4 trix: Wate Lab TAL RCH O-1399-4 trix: Wate
Prep Type Total/NA Client Samp Date Collected Date Received Prep Type Total/NA Client Samp Date Collected Date Received	Batch Type Analysis DIE ID: B3: d: 11/05/15 d: Batch	Batch Method 7196A 3731 10:50 12:25 Batch Method 7196A 3722 10:00 12:25 Batch Method 7196A	Run	Pactor Dill Factor 1	Amount Initial Amount	Final Amount Final	Batch Number 1863	or Analyzed 11/05/15 14:42 Lab Sample Prepared or Analyzed 11/05/15 14:42 Lab Sample	Analyst AMC Analyst AMC Analyst Analyst	Lab TAL RCH Lab TAL RCH 0-1399-4 trix: Wate
Prep Type Total/NA Client Samp Date Collected Date Received Prep Type Total/NA Client Samp Date Collected Date Received Prep Type Total/NA Prep Type Total/NA	Batch Type Analysis Ole ID: B3: d: 11/05/15 d: 11/05/	Batch Method 7196A 7196A 7196A 7196A 7196A 7196A	Run	Pactor Dill Factor Dill Factor	Amount Initial Amount	Final Amount Final	Batch Number 1863 Batch Number	or Analyzed 11/05/15 14:42 Lab Sample Prepared or Analyzed 11/05/15 14:42 Lab Sample Prepared or Analyzed 11/05/15 14:43	Analyst Analyst Analyst AMC Analyst AMC Analyst AMC	Lab TAL RCH Co-1399-4 TAL RCH Lab TAL RCH Lab TAL RCH
Prep Type Total/NA Client Samp Oate Collected Oate Received Total/NA Client Samp Oate Collected Oate Received Total/NA Client Samp Oate Collected Oate Received	Batch Type Analysis Ole ID: B3: d: 11/05/15 d: 11/05/	Batch Method 7196A 3731 10:50 12:25 Batch Method 7196A 3722 10:00 12:25 Batch Method 7196A 3722 3722 3722 3722 3722	Run	Pactor Dill Factor Dill Factor	Amount Initial Amount	Final Amount Final	Batch Number 1863 Batch Number	or Analyzed 11/05/15 14:42 Lab Sample Prepared or Analyzed 11/05/15 14:42 Lab Sample Prepared or Analyzed or Analyzed	Analyst AMC Analyst AMC Analyst AMC Analyst AMC Analyst AMC	Lab TAL RCH Co-1399- TAL RCH Co-1399- Trix: Wate

TestAmerica Richland

Analyst

Dil

Factor

Run

Initial

Amount

Final

Amount

Batch

1863

Number

Prepared

or Analyzed

11/05/15 14:43 AMC

Batch

Type

Analysis

Prep Type

Total/NA

Batch

Method

7196A

TAL RCH

				Lab	Chronic	ele				
Client: CH2M H Project/Site: Ch			Company					TestAmerica		300-1399-1 G: WC0545
Client Samp	le ID: B3	3733						Lab Sample	e ID: 30	0-1399-7
Date Collected								•		trix: Water
Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			1863	11/05/15 14:46	AMC	TAL RCH
Client Samp	le ID: B3	3734						Lab Sample	e ID: 30	0-1399-8
Date Collected Date Received								-		trix: Water
	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			1863	11/05/15 14:46	AMC	TAL RCH
Client Samp	le ID: B3	3725						Lab Sample	e ID: 30	0-1399-9
Date Collected Date Received									Ма	trix: Water
	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			1863	11/05/15 14:47	AMC	TAL RCH
Client Samp	le ID: B3	3724						Lab Sample	ID: 300	-1399-10
Date Collected Date Received									Ма	trix: Water
	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	=	Analyst	Lab
Total/NA	Analysis	7196A		1			1863	11/05/15 14:47	-	TAL RCH
Client Samp	le ID: B3	3710						Lab Sample	ID: 300	-1399-11
Date Collected								•		trix: Water
Date Received	: 11/05/15	12:25								
	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			1863	11/05/15 14:47	AMC	TAL RCH
Client Samp	le ID: B3	3709						Lab Sample	ID: 300	-1399-12
Date Collected								-	Ma	trix: Water
Date Received	: 11/05/15 ·	12:25								

TestAmerica Richland

Dil

Factor

Run

Initial

Amount

Final

Amount

Batch

1863

Number

Prepared

or Analyzed Analyst

11/05/15 14:48 AMC

Batch

7196A

Method

Batch

Type

Analysis

Prep Type

Total/NA

TAL RCH

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company

Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-1399-1

SDG: WC0545

Client Sample ID: B33718

Date Collected: 11/05/15 10:09 Date Received: 11/05/15 12:25

Lab Sample ID: 300-1399-13

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			1863	11/05/15 14:48	AMC	TAL RCH

Lab Sample ID: 300-1399-14

Matrix: Water

Date Collected: 11/05/15 10:09 Date Received: 11/05/15 12:25

Client Sample ID: B33719

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			1863	11/05/15 14:51	AMC	TAL RCH

Client Sample ID: B33717 Lab Sample ID: 300-1399-15

Date Collected: 11/05/15 10:09 **Matrix: Water**

Date Received: 11/05/15 12:25

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	10 mL		1852	11/05/15 13:48	RLC	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		1853	11/05/15 13:48	RLC	TAL RCH

Client Sample ID: B33708 Lab Sample ID: 300-1399-16 **Matrix: Water**

Date Collected: 11/05/15 08:57

Date Received: 11/05/15 12:25

Prep Type Total/NA	Batch Type Analysis	Batch Method 300.0	Run	Dil Factor	Initial Amount 10 mL	Final Amount	Batch Number 1852	Prepared or Analyzed 11/05/15 14:03	Analyst RLC	Lab TAL RCH
Total/NA	Analysis	300.0		2	10 mL		1853	11/05/15 14:03	RLC	TAL RCH
Total/NA	Analysis	300.0		5	10 mL		1853	11/05/15 14:27	RLC	TAL RCH

Lab Sample ID: 300-1394-A-5 DU Client Sample ID: Duplicate

Date Collected: 11/04/15 12:41

Date Received: 11/05/15 09:25

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	10 mL		1852	11/05/15 12:40	RLC	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		1853	11/05/15 12:40	RLC	TAL RCH

Lab Sample ID: 300-1399-1 DU Client Sample ID: B33727

Date Collected: 11/05/15 11:13 **Matrix: Water** Date Received: 11/05/15 12:25

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Method Number or Analyzed Analyst Type Run **Factor** Amount Amount Total/NA 7196A 1863 11/05/15 14:41 AMC TAL RCH Analysis

Matrix: Water

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company

Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-1399-1

SDG: WC0545

Client Sample ID: Lab Control Sample

Date Collected: N/A Date Received: N/A

Lab Sample ID: LCS 300-1852/6

Matrix: Water

: Water

Dil Batch Batch Initial Final Batch Prepared Prep Type Method Amount Number or Analyzed Type Run Factor Amount Analyst Lab Total/NA 300.0 1852 11/05/15 11:55 RLC TAL RCH Analysis 10 ml

Client Sample ID: Lab Control Sample

Date Collected: N/A
Date Received: N/A

Lab Sample ID: LCS 300-1853/6

Matrix: Water

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Type Method Run Factor Amount Amount Number or Analyzed Analyst Lab 11/05/15 11:55 RLC Total/NA Analysis 300.0 10 mL 1853 TAL RCH

9

Client Sample ID: Lab Control Sample

Date Collected: N/A Date Received: N/A

Lab Sample ID: LCS 300-1863/4 Matrix: Water

15

Batch Dil Initial Batch Batch Final Prepared Type Method Factor Amount Number or Analyzed **Prep Type** Run Amount Analyst Lab 7196A 11/05/15 14:38 AMC TAL RCH Total/NA Analysis 1863

12

Client Sample ID: Method Blank

Date Collected: N/A

Date Received: N/A

Lab Sample ID: MB 300-1852/5

Matrix: Water

Batch **Batch** Dil Initial Final Batch Prepared Method Number Prep Type Type Run **Factor** Amount Amount or Analyzed Analyst 300.0 1852 11/05/15 11:40 RLC TAL RCH Total/NA Analysis 10 mL

Client Sample ID: Method Blank

Date Collected: N/A Date Received: N/A

Lab Sample ID: MB 300-1853/5

Matrix: Water

Batch Batch Dil Initial Final **Batch** Prepared Method Amount Number or Analyzed Prep Type Type Run **Factor** Amount Analyst Total/NA 1853 11/05/15 11:40 RLC TAL RCH Analysis 300.0 10 mL

Client Sample ID: Method Blank

Date Collected: N/A

Lab Sample ID: MB 300-1863/3

Matrix: Water

Date Received: N/A

Batch **Batch** Dil Initial Final Batch Prepared **Prep Type** Type Method Amount Number or Analyzed Run **Factor** Amount Analyst Lab Total/NA Analysis 7196A 1863 11/05/15 14:38 AMC TAL RCH

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company

Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-1399-1

SDG: WC0545

Client Sample ID: Matrix Spike

Date Collected: 11/04/15 12:41 Date Received: 11/05/15 09:25

Client Sample ID: B33727

Date Collected: 11/05/15 11:13

Date Received: 11/05/15 12:25

Lab Sample	ID: 300-1394-A-5 MS
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Matrix: Water

Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	10 mL		1852	11/05/15 12:25	RLC	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		1853	11/05/15 12:25	RLC	TAL RCH

Lab Sample ID: 300-1399-1 MS

Lab cample 1D. 300-1333-1 MO

Matrix: Water

Dil Batch Batch Initial Final Batch Prepared Method Amount Number Analyst Prep Type Type Run Factor Amount or Analyzed Lab Total/NA 7196A 1863 11/05/15 14:38 AMC TAL RCH Analysis 3.0 mL

Laboratory References:

TAL RCH = TestAmerica Richland, 2800 George Washington Way, Richland, WA 99352, TEL (509)375-3131

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12

Method Summary

Client: CH2M Hill Plateau Remediation Company

Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-1399-1

SDG: WC0545

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL RCH
7196A	Chromium, Hexavalent	SW846	TAL RCH

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions. SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL RCH = TestAmerica Richland, 2800 George Washington Way, Richland, WA 99352, TEL (509)375-3131

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Sample Summary

Client: CH2M Hill Plateau Remediation Company

Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-1399-1

SDG: WC0545

Lab Sample ID	Client Sample ID	Matrix	Collected Received
300-1399-1	B33727	Water	11/05/15 11:13 11/05/15 12:25
300-1399-2	B33728	Water	11/05/15 11:13 11/05/15 12:25
300-1399-3	B33730	Water	11/05/15 10:50 11/05/15 12:25
300-1399-4	B33731	Water	11/05/15 10:50 11/05/15 12:25
300-1399-5	B33722	Water	11/05/15 10:00 11/05/15 12:25
300-1399-6	B33721	Water	11/05/15 10:00 11/05/15 12:25
300-1399-7	B33733	Water	11/05/15 10:41 11/05/15 12:25
300-1399-8	B33734	Water	11/05/15 10:41 11/05/15 12:25
300-1399-9	B33725	Water	11/05/15 09:50 11/05/15 12:25
300-1399-10	B33724	Water	11/05/15 09:50 11/05/15 12:25
300-1399-11	B33710	Water	11/05/15 08:57 11/05/15 12:25
300-1399-12	B33709	Water	11/05/15 08:57 11/05/15 12:25
300-1399-13	B33718	Water	11/05/15 10:09 11/05/15 12:25
300-1399-14	B33719	Water	11/05/15 10:09 11/05/15 12:25
300-1399-15	B33717	Water	11/05/15 10:09 11/05/15 12:25
300-1399-16	B33708	Water	11/05/15 08:57 11/05/15 12:25

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company Job Number: 300-1399-1

SDG Number: WC0545

Login Number: 1399 List Source: TestAmerica Richland

List Number: 1 Creator: Bock, Julie A

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	















